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ABSTRACT OF THE DISCLOSURE

In a wireless LAN communication system, a communication mode is
5 automatically switched between an infrastructure mode and an ad-hoc mode.
Communication between two stations is started in the infrastructure mode.
Packets transmitted in an infrastructure network are monitored to detect a
packet transmitted to an access point and addressed, as a final destination,
to one's own station or a destination station. If such a packet is detected, it
10 is determined that a transmitting or source station is in a state that allows an
ad-hoc communication. A channel searcher of the access point searches for
available channels of an ad-hoc network. A switching controller selects one
of the available channels and transmits information indicating the selected
channel to the source and destination stations. In response to receiving the
15 information indicating the selected channel, the source and destination
stations start direct communication using the selected channel of the ad-
hoc network. The selection of the channel may be performed by a station.
Associated data may be stored in a temporary data storage unit.